# For Handy Boys and Girls to Make and Do



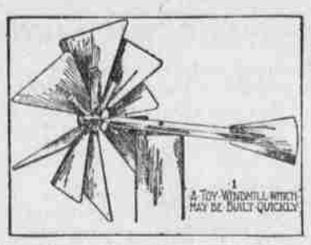
By A. NEELY HALL.

### A TOY WINDMILL.

No mechanical toy is more interesting to make, nor more interesting to watch when in operation than a miniature windmill. It is a very simple toy to construct, and all of the material that it requires can usually be found at hand, which are two reasons why it is one of the most popular of home-made toys, and why nearly every boy at one time or another builds one.

Figure 1 shows a small model which may be constructed quickly. You will notice by the detail illustrations that the hub of the windmill is a spool (Fig. 2), that the blades are cut out of cigar-box wood, shingles, tin, or cardboard, and are fastened to the side of short spoke sticks driven into holes bored in the spool hub (Fig. 3), that the hub turns on the rounded end of a stick shaft (Fig. 4), that the square end of the shaft is slotted to receive a fan-shaped tail (Fig. 5), and that the shaft is pivoted to the top of a clothes-post, or a post put up for the purpose (Figs. 1 and 6).

Use a large ribbon-spool for the hub. You can get one at any dry goods store. Locate eight holes around the center of the spool, at equal distances from one another, and

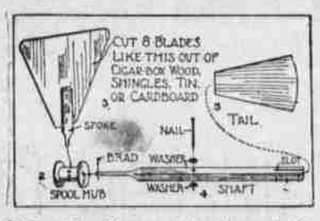



bore these with a gimlet or bit, or cut them with the small blade of your jackknife.

Cut the eight blades 6 inches long, 5 inches wide on their wide edge, and 1½ inches wide on their narrow edge. Prepare the hub sticks about ½ inch by ¾ inch by 4½ inches in size, and whittle one end pointed to fit in the hub (Fig. 3). Fasten the blades to the spokes with nails long enough to drive through the spokes and clinch on the under side. Glue the spokes in the hub holes, turning them so the blades will stand at about the angle shown.

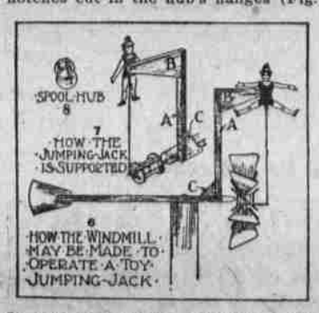
The shaft should be made of a hard wood stick about ¾ inch by 1½ inches by 14 inches in size. Cut the round end small enough so the hub will turn on it freely, and punch a small hole through it so a brad may be driven through it to hold the hub in place. Cut the slot in the square end with a saw. Make the tail about 5½ inches long, 4 inches wide at its wide end, and 2 inches wide at its narrow end (Fig. 5).

The windmill must be pivoted to the post support at its exact balancing point. Pivot the shaft with a




long nail. Bore a hole through the shaft a trifle larger than the nail, so the shaft will turn freely. Place a washer between the nail-head and the shaft, and another between the shaft and the post support.

Figure 6 shows how the power from the toy windmill may be utilized to operate a toy jumping-jack, by supporting the jumping-jack on a bracket and connecting its string to the hub of the windmill. Cut the upright of the bracket (A) 14 inches long and the cross piece (B) 7 inches long. Nail A to B, and nail the jumping-jack at its center to the end of B (Fig. 7). Fasten the triangular block (C) to the lower end of A, and then nail both A and B to the edge of the shaft at a point that will bring the string of the jumping-jack a trifle beyond the windmill blades. Fasten a small stick, having a brad driven in one end, in notches cut in the hub's flanges (Fig.




8), and connect the brad and jack's string with a piece of wire or strong string. Then as the windmill revolves it will operate the toy as indicated in Figs. 6 and 7.

### Of Some Use.

Old Gotrox (to his fashionable son)—You and your set thoroughly disgust me. You could get along as well without a head on your shoulders as with one.

Algy—Aw—fawther! How weedic-ulous! Why, wheah would a fellah weah his hat?—Puck.

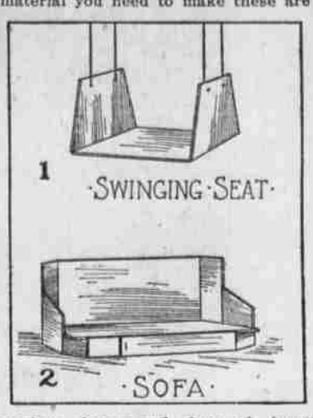
### Use Many Corks.

Nearly 70,000 tons of corks are needed for the bottled beer and aerated waters consumed annually in Britain.

By DOROTHY PERKINS.

### BERRY BOX FURNITURE.

Has it ever occurred to you girls what pretty pieces of doll furniture may be made out of the little berry boxes so plentiful at this season of the year? Several of the easily made pieces are illustrated below. All the material you need to make these are

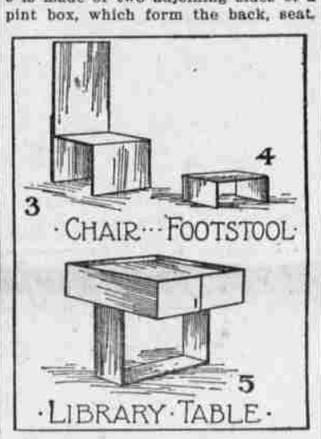



various shapes and sizes of berry boxes, a sharp knife, and a bottle of glue.

The little swinging seat in illustration No. 1 is made from the bottom and two ends of a square pint box, with the ends tapered off with a knife. A strong linen thread, knotted on the end and run through holes pierced in four places, provides "chains" to hang it by. It may be suspended from a chair round.

Illustration No. 2 shows a sofa that is made out of a long shaped quart berry box. All you have to do is remove one side of the box down to the bottom, then carefully cut away the end as shown, to form arms, and the sofa is completed.

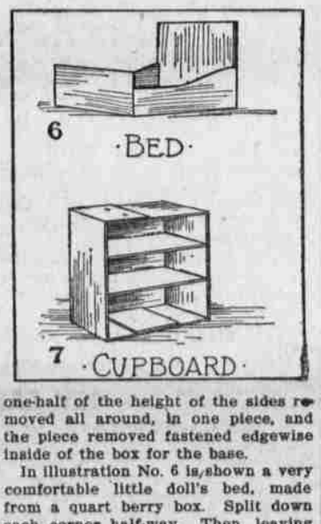
The chair shown in illustration No. 3 is made of two adjoining sides of a pint box, which form the back, seat




and front legs, and an extra piece which forms the back legs. One side piece forms the chair back, and the other side is scored along its center with a knife, and bent down to form the seat and front legs. The rear legs are made of the extra piece, which is glued to the chair back.

The little footstool shown in illustration No. 4 is quite simple to make. One side of a pint box is used, and it is only necessary to score the piece one-half inch from each end, and bend down the ends for legs.

The library table (Illustration No. 5) is made out of a pint berry box, with




one-half of the height of the sides removed all around, in one piece, and the piece removed fastened edgewise inside of the box for the base.

In illustration No. 6 is shown a very comfortable little doll's bed, made from a quart berry box. Split down each corner half-way. Then, leaving one side of the box whole, for the head of the bed, cut down the opposite side about one-half, for the foot, and trim down the other two sides for the sides of the bed.

The cupboard in illustration No. 7 is made out of a quart berry box, with shelves cut from the sides of other boxes fastened inside with glue. Hang curtains made of scraps from the rag bag across the front.

Ideas for a cradle, a dresser and other furniture will suggest themselves to you.

The berry box wood may be stained a pretty brown by using the coffee left over from breakfast.

### Why He Was Sorry.

"I understand that your mother tripped and fell flat yesterday."

"Yes."

"Were you not sorry?"

"I certainly was! I just happened to be looking the other way."

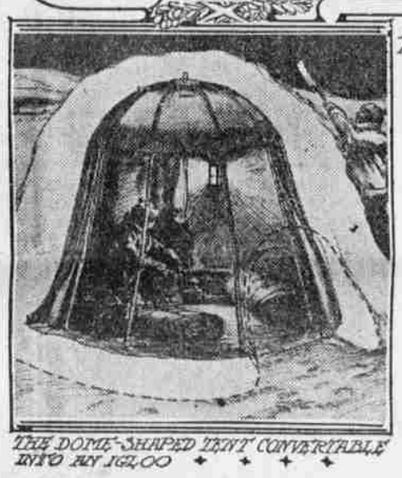
### A Proverb Made Over.

The man who wins success is not
The one who hesitates to swat
The iron hard when it's hot.

# THE SHACKLETON TRANSANTARCTIC EXPEDITION


SHACKLETON'S AIR-PROPELLED WATER-BOAT

HOW SHACKLETON PROPOSES TO DRAG HIS SLEDGES



THE DOME-SHAPED TENT CONVERTABLE INTO AN IGLOO

IR ERNEST SHACKLETON'S coming trip across the Antarctic continent, with the South pole as a half-way station, is probably the most daring journey ever undertaken by man. It reminds one of the conqueror Cortez burning his ships behind him. On previous expeditions with the pole as goal the explorers have laid a succession of bases upon which they could depend when returning. Sir Ernest will push straight onward, from sea to sea, not reckoning at all on the possibility that an expedition may come a little way to meet him.

For several years Sir Ernest held the record of approaching closer to the South pole than any other man. He feels keenly the dimming of British fame by the exploits of Amundsen and Peary. With no more poles to conquer, he might well sit down and weep, like Alexander the Great. But instead he has set himself this unique feat.

The news that Sir Ernest expects to come to the United States before leaving for the south seas has stirred great interest among Americans over plans for the exploring expedition. Sir Ernest is very popular here, where he has lectured extensively. It is probable that wealthy Americans will add considerably to the funds of his expedition.

He started on his last expedition $100,000 in debt. It took him two years after his return to pay off this debt and it was hard work, too. This time he has resolved not to run into debt again. He has $250,000 guaranteed by a friend whose name has not been made public. This sum he will make do if necessary, but he will be able to carry on scientific work much more extensively if he can obtain a further sum of $100,000.

Sir Ernest has announced that he will experiment with aeroplane motors and propellers for travel over the snow this winter, his laboratories to be in Canada or Siberia. He hopes to perfect this novel substitute for the Eskimo dog, which he will also use, and the hardy Shetland pony.

Besides aeroplanes and parts of aeroplanes, Shackleton will take advantage of wireless, the movies, prepared foods, and many other of the newest inventions.

He believes he will have the most perfectly planned expedition that ever set out, and as he himself helped to equip many others expeditions and has been a member of several, he ought to know.

Sir Ernest Shackleton is now in the prime of life, a splendid man physically and possessing an inspiring presence. He is a born leader. He makes all about him enthusiastic, especially when the fire of memories of the frozen south moves him. He is forty years old—pictures taken of him on his antarctic trips before he has had a shave make him appear sixty-five, while in his street clothes on the Strand he appears a virile thirty.

To the layman it may be surprising to learn that there are 5,000,000 square miles of unknown territory on the continent of Antarctica. This gives an idea of the possibilities of discovery open to Sir Ernest. More than half his journey is said to be laid along a new route and, if things go right, almost all of it will traverse virgin fields. It is no overstatement to call it the biggest polar journey ever attempted.

Briefly stated, it will cross the dead continent of snow, mountain ranges, volcanoes and frightful storms from the side of the Western hemisphere to the side of the Eastern hemisphere.

The main party will leave civilization at Buenos Ayres and reach it again in Christchurch, or some other New Zealand city.

The start will be from Argentina in October of this year, and if a good landing is made on the shore of Weddell sea by the beginning of November, a shore party will proceed immediately across. In this case the expedition should reach Ross sea, on the other side, by March, 1915.

But if the shore party has hard luck, it will content itself with laying a series of caches and will then return to the Weddell sea shore, starting out again a year later.

The expedition will have two ships. The first, which carries Shackleton to the Antarctic continent, will do work in tracing the shore of the continent to the west, and will go back to South America before the close of navigation, returning the next year to take up a party which will winter on the shore of Weddell sea and carry out scientific work in the so-called "Weddell quadrant." Long sledge journeys will be taken east and west of the base by this party.

The second ship will approach the continent from the other, or Ross sea, side, and take back Shackleton, according to his plans. If Shackleton crosses the first season, he will reach civilization again by the middle of April, 1915. Otherwise, it will be a year later.

This second vessel will sail from New Zealand about the same time as the Weddell sea ship sails south. On landing at a prearranged base, the second party will send a sledging expedition as far south as possible, to latitude 83, if practicable, but this expedition will return in time to go north again before the close of navigation. The expedition will endeavor to lay a series of depots along what may be the last stages of Shackleton's route. But Shackleton will not depend on them in any way. They may not be laid at all. If Shackleton doesn't arrive this season, the second ship will return south the next year again.

Five months is the time Shackleton estimates as necessary for his crossing of the south polar continent. He allows ten days for delays by blizzards. The minimum distance from sea to sea is 1,700 miles, but it is probable that Sir Ernest will try to cover new ground throughout and so go much farther.

The "transarctic party," as Sir Ernest calls it, will begin its journey with 120 dogs, two sledges driven by aeroplane propellers with aeroplane engines, and an aeroplane with clipped wings to "tarri" over the ice. But a large part of the work of transport will be by dogs. Dogs will eat their fellows' flesh, while ponies will not.

Motor sledges have been found to be practically useless in the Antarctic, as the amount of work put on the engine when passing over varying surfaces generally causes the motor to break down. Sir Ernest proposes to build an ordinary sledge, larger than the usual size, and on this to mount an aeroplane engine, with an aeroplane propeller in front. He figures that a sledge of this description is capable of dragging a ton at five or six miles an hour.

Instead of one sleeping bag, each explorer will carry three, so that when one is iced up it can be discarded. The tents will be made of three-ply wood, strong enough to support a dome-shaped covering of snow, thus insuring more warmth.

The full complement of the short party will be 12 men, and six of these will make the journey across. Both of the ships will be fitted to burn oil instead of coal, as the liquid fuel extends the radius of action and renders the vessels independent of ballast. The ships, which will carry 30 men altogether, will be fully equipped with cages and tanks for bringing home live penguins and seals, such as have never been taken from the antarctic regions.

Each ship will have a biologist, geologist and physicist, and the three from the first ship will be stationed in her winter quarters in the Weddell sea. Another party of three will explore unknown tracts along the coast near the winter quarters.

The aeroplane with clipped wings will not be able to fly. Its wings will take practically all the weight off the wheels.

Wireless and moving picture outfits will not be carried, it is expected, on the transcontinental trip. But one cinematograph machine will go with the party working from Ross sea and another with the party working about Weddell sea. These films will have both scientific and popular interest. Pocket wireless outfits having a range of from 100 to 200 miles will also be carried by these two expeditions, but the main party will not attempt the added weight of either device.

While the North pole is situated about two miles beneath the sea, the South pole is on the plateau two miles above the sea. The conditions of journeys to the two points are widely different. In the North, within 500 miles of the pole, in summer time, there are 100 different species of flowering plants. There are no flowering plants within 1,700 miles of the South pole, and within 700 miles of it there is no plant or animal life of any description whatever.

In the North you may expect to get the arctic hare and the ptarmigan on the northermost land. There are also bears and the life in the sea.

On a trip to the North pole, the explorer sledges over a moving sea of ice that packs up and breaks up, and it is impossible to lay any depots. The danger of northern sledge traveling is the break-up of the ice and the opening of what are called leads—open water channels left by the parting of the ice.

In the South the difficulties are the varying nature of the snow surfaces, the fact that the temperatures are much lower and the danger of crevasses. In the North one can fall 10 to 20 feet into the sea, but in the South one may fall 1,000 feet down a crevasse.

By this notable expedition, Sir Ernest hopes to cut in two one of the largest, if not the largest, white spaces yet remaining on the map. He expects to solve the complete continental nature of the Antarctic.

Especially scientists would like to know whether the great range of mountains on the New Zealand side of the Antarctic continent really stretches all the way across and is a continuation of the Andes. This Victoria chain has been traced to the pole by Amundsen and other explorers. The solving of this problem is of intense interest to geographers all over the world. The discovery of the great mountain range, which is assumed to extend in a general way from the pole to Weddell sea, would be one of the biggest geographical triumps possible.

The geological results will also be of the greatest scientific value. The Weddell sea party will take many specimens, and even the transcontinental party will chip off pieces of all exposed rocks they find.

Continuous magnetic observations will be taken all the way from Weddell sea to Ross sea, as the route will lie not far from the magnetic pole. Information of great value to navigators would be learned.

Continuous scientific observations of the weather will also be taken, and these should be very valuable when correlated with the results obtained by other expeditions.

Biological work will be thoroughly carried on, and the distribution of fauna and flora will be studied. Both the ships will be equipped for dredging and sounding. All branches of science will be most carefully attended to and the net result ought to be a large increase in human knowledge. But first and foremost, the crossing of the polar continent, will be the main object of the expedition.

# HOLLAND'S NEW LAND

Little Holland is about to begin the great work of draining the Zuyder Zee. It is expected that 17 years will be required to make the entire area now covered by water fit for habitation and cultivation. About 24,700 acres of land land are already being annually reclaimed, and this reclamation is likely to continue for about ten years. The reclaimed lands of the Zuyder Zee will be sold by the state in small lots and gradually, so as not to depress existing prices. It is estimated that at least 40,000 persons will be required to cultivate this reclaimed sea land, which will be used for the growing of root crops, sugar beets, potatoes, peas and other vegetables. "It is estimated," says La Gazette de Holland, "that the value of these crops will be nearly $30,000,000. The present Zuyder Zee fisheries employ 3,017 men and produce herrings, flounders, anchovies, smelts and shrimps to the value of $835,000 a year. The boats in use in the Zuyder Zee will be unsuitable for fishing in the North sea, and new boats will be supplied by the state to enable the fishermen to work that sea."

### Spontaneous Generation Life's Origin.

Dr. Charles Bastion brings forward fresh evidence intended to prove the spontaneous generation origin of life. From solutions of sodium silicate and pernitrate of iron, which were boiled 20 minutes to destroy all life, he claims to have grown de novo moulds and fungus germs. He maintains these are genuine organic growth and adduces proof of their growth and multiplication, with the formation of filaments. Doctor Bastion concludes that the de novo origin of living matter is established beyond the region of doubt. At the same time he fully recognizes that the actual steps of the spontaneous generation process remain to be discovered.

# ROMANCE IN RAIN

### Cupid Chose Wet Night for Work, but His Arrows Were None the Less Effective.

"Nine o'clock," said George Jackson to himself. "I'll have to leave, even if the street is flooded. Why didn't I have sense enough to bring an umbrella? I suppose I was thinking about —Lillian."

He returned to the shelf the book he had been trying to read. The janitor of the library was preparing to close for the night.

"Pouring," Jackson muttered. "Oh, well, I can stay inside the storm door, and be just as gloomy as I please."

Another young man awaited the cessation of the shower in the shelter of the storm door. In accordance with the rules, the door leading into the library was locked behind them.

"Pretty wet," Jackson ventured.

"Yes," his companion returned, briefly.

"I came here to read something that would make me forget my troubles," Jackson confided. "I ought to have known better than to come without an umbrella."

"Odd," his companion replied, with an effort at a laugh. "I did the same thing."

"You did?" Jackson inquired. "So I see that other people have troubles, too."

"They have. The fact is, I'm in love myself."

They both laughed uncomfortably at this confession, after which they remained silent for a moment or two.

"You've hit it right," Jackson admitted. "I don't think you lost her, though, as I did."

"I did lose her."

"Good heavens!" Jackson burst out. "We seem to be twins. I guess you can understand, so I'll tell you about it.

"Lillian is her name—never mind the rest. I've been mad about her since I first met her. I could always see, though, that there was some one else where she was concerned. She's away from home now—until tomorrow. Since she went, I heard on good authority that her engagement to this some one else, whoever he is, will soon be announced. No use—I knew it all along. So I'm sailing for England tomorrow morning."

"Mine's not much different," the other stated, after a thoughtful pause. "I'll call her Helen—because that isn't her name. I've known her since we were children. I thought she really cared for me. Maybe I wasn't brilliant enough. A few weeks ago, she went to stay at her aunt's. She met a foreigner there. I suppose he fascinated her for the time. Anyhow, I could tell by the way she spoke of him in the one or two letters I had from her that she's mad over him. They're to become engaged. She is to return tonight. I have decided that it would be better for us not to meet again. So I'm leaving tomorrow. I'm sorry that I'm not going your way—I'm going west. On the way here, I stopped at the house and talked with Helen's mother—a fine old lady. She understood. So I left a note for Helen, and — Well, I hope you make out better than I did. I see it has almost stopped raining."

"Glad to have met you," said Jackson, as they stepped out into the street. "If you—"

A motorcar, making a turn, cast the glare of its lights in his eyes. It stopped at the curb. A girl stepped out. Jackson's companion started forward with an exclamation.

Jackson, unnoticed, stood staring, unable for the moment to move from his position.

"Lillian!" he muttered, under his breath. "So my friend here is the other man!"

"Why, Tom!" the girl exclaimed. "I'm so glad I found you! It was mother—she's waiting in the car. The affair about the Frenchman was only talk. I'm so glad you didn't go wherever you were going! Mother gave me your note, and told me what you said. I explained to her that the talk about the Frenchman was only gossip. So she decided we had better chase you and tell you. You told her you would stop at the library. She guessed that you had been caught in the storm."

"Thank God!" the young man declared, heartily.

The girl turned, noticing Jackson for the first time.

"Why, Mr. Jackson!" she greeted.

"Lillian—I mean, Miss Hunter!" he responded.

"This is about the sixth time I've been mistaken for Lillian Hunter this week," she declared. "You ought to know better than that, Mr. Jackson—you've made the mistake before."

A light dawned upon Jackson. "Miss Matthews," he corrected. "I—"

"Pardon me a moment. I have something to say to Mr. Jackson," the girl requested of the other young man, who stepped aside.

"I was talking to Lillian a number of times while I was away," she informed. "She's in love with you. She can't think of anyone else. She confessed it to me. She told me you seemed to have a notion that she cared for some one else, which isn't true. So, if you know when—when you have a good chance—well, don't neglect it."

"You can be sure I won't," Jackson assured. "I guess," he commented to himself, "I won't go to England."—New York Press.

### Swiss Electrification.

The Swiss government is considering the electrification of all of its railways.

### Made a Hit With Him.

Jenkins—"Didn't that lawyer on the other side give you a terrible overhauling?" Thompson—"Didn't he, though? You can bet if I have any more law business, I'm going to hire him."—Puck.

### Shakespearean Glossary.

Macbeth strode down upon the witches. "What make you there?" quoth he. "Scrapple," replied she of Endor, and Macbeth strode off the while the cold wind howled upon the laird's bonnie blue knees.